

7 August 2008

AGREEMENT

CONCERNING THE ADOPTION OF UNIFORM TECHNICAL PRESCRIPTIONS FOR WHEELED VEHICLES, EQUIPMENT AND PARTS WHICH CAN BE FITTED AND/OR BE USED ON WHEELED VEHICLES AND THE CONDITIONS FOR RECIPROCAL RECOGNITION OF APPROVALS GRANTED ON THE BASIS OF THESE PRESCRIPTIONS */

(Revision 2, including the amendments that entered into force on 16 October 1995)

Addendum 47: Regulation No. 48

Revision 5 - Amendment 1

Supplement 4 to the 03 series of amendments - Date of entry into force: 11 July 2008

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF VEHICLES WITH REGARD TO THE INSTALLATION OF LIGHTING AND LIGHT- SIGNALLING DEVICES



UNITED NATIONS

*/ Former title of the Agreement:

Agreement Concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958.

Paragraph 2.7.1.1.6., amend to read:

"2.7.1.1.6. "Light-emitting diode (LED) light source" means a light source where the element for visible radiation is one or more solid state junctions producing injection-luminescence/fluorescence;"

Insert a new paragraph 2.7.1.1.7., to read:

"2.7.1.1.7. "LED module" means a light source module containing as light sources only LEDs."

Insert a new paragraph 2.7.10.1., to read:

"2.7.10.1. "Principal passing beam (principal dipped beam)" means the dipped beam produced without the contribution of infrared (IR) emitter and/or additional light sources for bend lighting."

Paragraph 2.7.19., amend to read:

"2.7.19. "Front fog lamp" means a lamp used to improve the illumination of the road ahead of the vehicle in case of fog or any similar condition of reduced visibility."

Paragraph 2.7.27., amend to read:

"2.7.27. "Objective luminous flux" means a design value of the luminous flux of a replaceable light source or light source module. It shall be achieved, within the specified tolerances, when the replaceable light source or light source module is energized by the power supply at the specified test voltage, as indicated in the data sheet of the light source or the technical specification as submitted with the light source module."

Paragraph 2.14., amend to read:

"2.14. "Extreme outer edge" on either side of the vehicle, means the plane parallel to the median longitudinal plane of the vehicle and touching its lateral outer edge, disregarding the projection:

2.14.1. of tyres near their point of contact with the ground, and of connections for tyre-pressure gauges;

2.14.2. of any anti-skid devices mounted on the wheels;

2.14.3. of devices for indirect vision;

- 2.14.4. of side direction-indicator lamps, end-outline marker lamps, front and rear position lamps, parking lamps, retro-reflectors and side-marker lamps.
- 2.14.5. of customs seals affixed to the vehicle, and of devices for securing and protecting such seals."

Insert a new paragraph 2.14.6., to read:

- "2.14.6. of service-door lighting systems on vehicles of categories M₂ and M₃ as specified in paragraph 2.7."

Paragraph 2.16.1., amend to read:

- "2.16.1. "A single lamp" means:

- (a)
- (b) any assembly of two independent lamps, whether identical or not, having the same function, both approved as type "D" lamp and installed so that:
 - (i) the projection of their apparent surfaces in the direction of the reference axis occupies not less than 60 per cent of the smallest quadrilateral circumscribing the projections of the said apparent surfaces in the direction of the reference axis, or
 - (ii) the distance between two adjacent/tangential distinct parts does not exceed 15 mm when measured perpendicularly to the reference axis, or
- (c) any assembly of two independent retro-reflectors, whether identical or not, that have been approved separately and are installed in such a way that:
 - (i) the projection of their apparent surfaces in the direction of the reference axis occupies not less than 60 per cent of the smallest quadrilateral circumscribing the projections of the said apparent surfaces in the direction of the reference axis, or
 - (ii) the distance between two adjacent/tangential distinct parts does not exceed 15 mm when measured perpendicularly to the reference axis."

Insert new paragraphs 2.27. and 2.27.1., to read:

- "2.27. "Pair" means the set of lamps of the same function on the left- and right-hand side of the vehicle;
- 2.27.1. "Matched pair" means the set of lamps of the same function on the left- and right-hand side of the vehicle, which, as a pair, complies with the photometric requirements."

Paragraph 5.5.3., amend to read:

"5.5.3. satisfy the same colorimetric requirements and have substantially identical photometric characteristics. This shall not apply to a matched pair of Class F3 front fog lamps."

Paragraph 5.10.2., amend to read:

"5.10.2. For the visibility of white light towards the rear of the vehicle, with the exception of white conspicuity markings fitted to the vehicle, there must be no direct visibility of the apparent surface of a white lamp if viewed by an observer moving within Zone 2 in a transverse plane situated 25 m behind the vehicle (see Annex 4);"

Paragraph 5.15., amend to read:

"5.15. The colours of the light emitted by the lamps are the following:

....

side retro-reflector,
non-triangular:

amber; however the rearmost side retro-reflector can be red if it is grouped or has part of the light emitting surface in common with the rear position lamp, the rear end outline marker lamp, the rear fog lamp, the stop-lamp, the red rearmost side-marker lamp or the rear retro-reflector, non- triangular.

..."

Paragraph 6.2.7., amend to read:

"6.2.7. Electrical connections

....

One additional light source or one or more LED module(s), located inside the dipped-beam headlamps or in a lamp (except the main-beam headlamp) grouped or reciprocally incorporated with the respective dipped-beam headlamps, may be activated to produce bend lighting, provided that the horizontal radius of curvature of the trajectory of the centre of gravity of the vehicle is 500 m or less. This may "

Paragraphs 6.2.8. to 6.2.8.2., amend to read:

"6.2.8. Tell-tale

6.2.8.1. Tell-tale optional.

6.2.8.2. A visual tell-tale whether flashing or not is mandatory:

- (a) in the case where the whole beam or the kink of the elbow of the cut-off is moved to produce bend lighting, or
- (b) if one or more LED modules are used to produce the principal dipped-beam.

It shall be activated:

- (a) in the event of a malfunction of the displacement of the kink of the elbow of the cut-off, or
- (b) in case of a failure of any one of the LED module(s) producing the principal dipped-beam.

It shall remain activated while the failure is present. It may be cancelled temporarily, but shall be repeated whenever the device, which starts and stops the engine, is switched on and off."

Paragraph 6.2.9., amend to read :

"6.2.9. Other requirements

....

Dipped-beam headlamps with a light source or LED module(s) producing the principal dipped beam and having a total objective luminous flux which exceeds 2,000 lumen shall only be installed in conjunction with the installation of headlamp cleaning device(s) according to Regulation No. 45. 8/

With respect to vertical inclination the provisions of paragraph 6.2.6.2.2. above shall not be applied for dipped-beam headlamps:

- (a) with LED module(s) producing the principal dipped beam, or
- (b) with a light source producing the principal dipped beam and having an objective luminous flux which exceeds 2,000 lumen.

Only dipped-beam headlamps according to "

Paragraph 6.3.4.2., amend to read (including a reference to new footnote 9/ and insertion of a new footnote 9/):

"6.3.4.2. In height:

Minimum: Not less than 250 mm above the ground.
Maximum: For M₁ and N₁ category vehicles: not more than 800 mm above the ground.

For all other categories except N₃G (off-road) 8/ vehicles: not more than 1,200 mm above the ground.

For category N₃G vehicles: the maximum height may be increased to 1,500 mm.

No point on the apparent surface in the direction of the reference axis must be higher than the highest point on the apparent surface in the direction of the reference axis of the dipped-beam headlamp.

9/ As defined in Annex 7 to the Consolidated Resolution on the Construction of Vehicles (R.E.3), (document TRANS/WP.29/78/Rev.1/Amend.2 as last amended by Amend.4)."

Paragraph 6.3.5., amend to read (including a reference to new footnote */ and insertion of a new footnote */):

"6.3.5. Geometric visibility

Defined by angles α and β as specified in paragraph 2.13.,

$\alpha = 5^\circ$ upwards and downwards,

$\beta = 45^\circ$ outwards and 10° inwards.

Since the photometric values required for front fog lamps do not cover the full geometric field of vision, a minimum value of one cd in the space remaining is required for type-approval purposes. The presence of partitions or other items of equipment near the front fog lamp shall not give rise to secondary effects causing discomfort to other road users. */

*/ Vehicle types which do not comply with this provision may continue to be approved until 18 months after the entry into force of Supplement 4 to the 03 series of amendments."

Paragraphs 6.3.6. to 6.3.6.2.5., amend to read (including a reference to new footnote */ and insertion of a new footnote */):

"6.3.6. Orientation

Toward the front.

6.3.6.1. Vertical orientation.

6.3.6.1.1. In the case of class "B" front fog lamps the vertical inclination of the cut-off to be set in the unladen vehicle state with one person in the driver's seat shall be -1.5 per cent or lower. */

6.3.6.1.2. In the case of class "F3" front fog lamps:

6.3.6.1.2.1. the initial downward inclination of the cut-off to be set in the unladen vehicle state with one person in the driver's seat shall be specified within an accuracy of one decimal place by the manufacturer and indicated in a clearly legible and indelible manner on each vehicle close to either the front fog lamp or the manufacturer's plate or in combination with the indication referred to in paragraph 6.2.6.1.1. by the symbol shown in Annex 7 to this Regulation. The value of this indicated downward inclination shall be defined in accordance with paragraph 6.3.6.1.2.2.

6.3.6.1.2.2. depending on the mounting height in metre (h) of the lower edge of the apparent surface in the direction of the reference axis of the front fog lamp, measured on the unladen vehicles, the vertical inclination of the cut-off to be set in the unladen vehicle state with one person in the driver's seat shall have the following value(s):

$h \leq 0.8$

Limits: between -1.0 per cent and -2.5 per cent

Initial aiming: between -1.5 per cent and -2.0 per cent

$h > 0.8$

Limits: between -1.5 per cent and -3.0 per cent

Initial aiming: between -2.0 per cent and -2.5 per cent

6.3.6.2. Front fog lamp leveling device.

6.3.6.2.1. In the case of a front fog lamp with (a) light source(s) having a total objective luminous flux, which exceeds 2,000 lumen, the requirements of paragraph 6.3.6.1.2.2. shall be automatically satisfied under all the loading conditions of Annex 5 of this Regulation."

6.3.6.2.2. Where a leveling device is fitted for a front fog lamp, independent or grouped with other front lighting and light signaling functions, it shall be such that the vertical inclination, under all the static loading conditions of Annex 5 of this Regulation, shall remain between the limits prescribed in paragraph 6.3.6.1.2.2.

6.3.6.2.3. In the case where the front fog lamp of category "F3" is part of the dipped beam headlamp or is part of an AFS system, the requirements of paragraph 6.2.6. shall be applied during the use of the front fog beam as part of the dipped beam.

In this case the leveling limits defined in paragraph 6.2.6. may be applied also when this front fog lamp is used as such.

- 6.3.6.2.4. The leveling device may also be used to automatically adapt the inclination of the front fog beam in relation to the prevailing ambient conditions, provided that the limits for the downward inclination specified in paragraph 6.3.6.1.2.2. are not exceeded.
- 6.3.6.2.5. In the case of a failure of the leveling device, the front fog beam shall not assume a position in which the cut off is less inclined than it was at the time when the failure of the device occurred.

*/ Vehicle types which do not comply with this provision may continue to be approved until 18 months after the entry into force of Supplement 4 to the 03 series of amendments."

Paragraph 6.3.9., amend to read:

"6.3.9. Other requirements

In the case where there is a positive indication in the communication form in item 10.9. of Annex 1 of Regulation No. 19 the alignment and the luminous intensities of the class "F3" front fog beam may be automatically adapted in relation to the prevailing ambient conditions. Any variations of the luminous intensities or alignment shall be performed automatically and in such a way that no discomfort, neither for the driver nor to other road users, is caused."

Paragraph 6.5.4.3., amend to read:

"6.5.4.3. In length (see figure below)

The distance between the shall not exceed 1,800 mm.

However, this distance shall not exceed 2,500 mm:

- (a) for M₁ and N₁ category vehicles;
- (b) for all other categories of vehicles if the structure of the vehicle makes it impossible to comply with the minimum angles of visibility."

Paragraph 6.5.8., amend to read (including a reference to new footnote */ and insertion of a new footnote */):

"6.5.8. Tell-tale

Operating tell-tale mandatory for direction indicator lamps of categories 1, 1a, 1b, 2a and 2b. It may be visual or auditory or both. If it is visual it shall be a flashing light which, at least in the event of the malfunction of any of these direction indicator lamps, is either extinguished, or remains alight without flashing, or shows a marked change of frequency. If it is entirely auditory it shall be clearly audible and shall show a marked change of frequency, at least in the event of the malfunction of any of these direction indicator lamps.

It shall be activated by the signal produced according to paragraph 6.4.2. of Regulation No. 6 or another suitable way.

If a motor vehicle is equipped */

*/ Vehicle types which do not comply with this provision may continue to be approved until 18 months after the entry into force of Supplement 4 to the 03 series of amendments."

Paragraph 6.11.7.4., amend to read:

"6.11.7.4. Except as provided in paragraphs 6.11.7.1., 6.11.7.3. and 6.11.7.5., the operation of the rear fog lamp(s) shall not be affected by switching on or off any other lamps."

Insert a new paragraph 6.11.7.5., to read:

"6.11.7.5. The rear fog lamp(s) of a drawing motor vehicle may be automatically switched off while a trailer is connected and the rear fog lamp(s) of the trailer is (are) activated."

Paragraph 6.13.2., amend to read:

"6.13.2. Number

Two visible from the front and two visible from the rear.

Optional: additional lamps may be fitted as follows:

- (a) two visible from the front;
- (b) two visible from the rear."

Paragraph 6.13.4.2., amend to read:

"6.13.4.2. In height:

....

Rear: At the maximum height compatible with the requirements relating to the width, design and operational requirements of the vehicle and to the symmetry of the lamps.

Both optional and mandatory (as applicable) lamps to be fitted as far separated in height as practicable and compatible with design/operational requirements of the vehicle and symmetry of the lamps."

Paragraph 6.13.4.3., amend to read:

"6.13.4.3. In length, no special requirement.

The additional lamps visible from the front, as specified in paragraph 6.13.4.2., as close as practicable to the rear. However, the distance between the additional lamps and the rear of the vehicle shall not exceed 400 mm."

Paragraph 6.13.9., amend to read:

"6.13.9. Other requirements

Provided that all other requirements are met, the mandatory or optional lamps, visible from the front and the mandatory or optional amps visible from the rear on the same side of the vehicle may be combined into one device.

Two of the lamps visible from the rear may be grouped, combined or reciprocally incorporated in accordance with paragraph 5.7.

The position of an end-outline marker lamp ..."

Paragraph 6.19., the reference to footnote 9/ and footnote 9/, renumber as footnote 10/.

Paragraph 6.19.7., amend to read (including a reference to new footnote */ and insertion of a new footnote */):

"6.19.7. Electrical connections

If installed, the daytime running lamps without the use of tools.

The daytime running lamp shall switch OFF automatically when the front fog lamps or headlamps are switched ON, except when the latter are used to give intermittent luminous warnings at short intervals. */

*/ Vehicle types which do not comply with this provision may continue to be approved until 18 months after the entry into force of Supplement 4 to the 03 series of amendments."

Paragraph 6.20.7., amend to read:

"6.20.7. Electrical connections

The cornering lamps must be so connected that they cannot be activated unless the main-beam headlamps or the dipped-beam headlamps are switched ON at the same time.

- 6.20.7.1. The cornering lamp on one side of the vehicle may only be switched ON automatically when the direction indicators on the same side of the vehicle are switched ON and/or when the steering angle is changed from the straight-ahead position towards the same side of the vehicle.

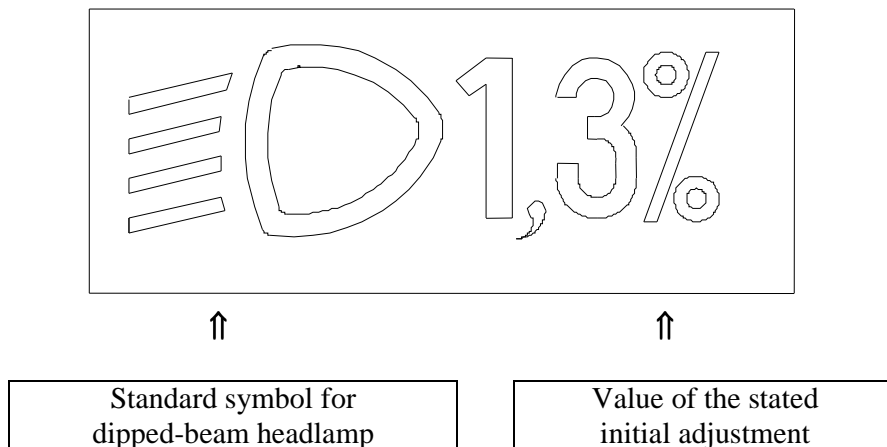
The cornering lamp shall be switched OFF automatically when the direction indicator is switched OFF and/or the steering angle has returned in the straight-ahead position.

- 6.20.7.2. When the reversing lamp is switched ON, both cornering lamps may be switched on simultaneously, independently from the steering wheel or direction indicator position. In this case, the cornering lamps shall be switched OFF when the reversing lamp is switched OFF."

Annex 7, amend to read:

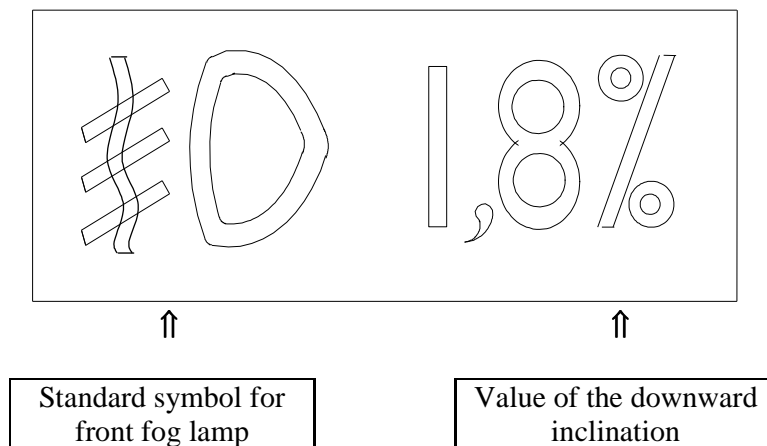
"Annex 7

Indication of the downward inclination of the front fog lamp cut-off referred to in paragraph 6.3.6.1.2. of this regulation



Example 1

The size of the symbol and characters is left to the discretion of the manufacturer.



Example 2

The size of the symbol and characters is left to the discretion of the manufacturer."
